MRH/HSH/HRH User Manual

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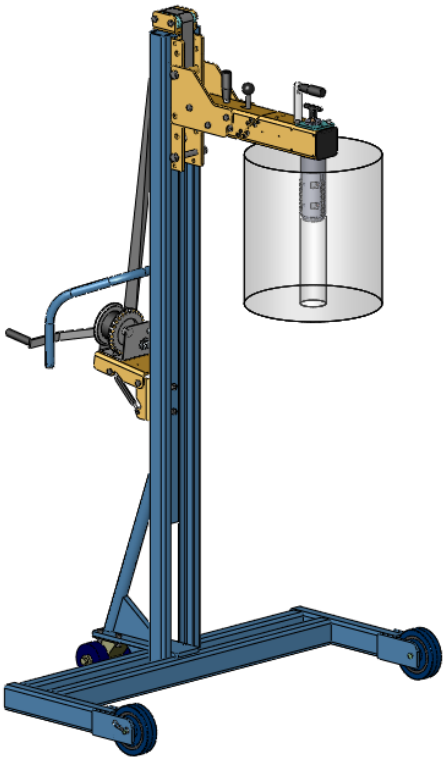

MRH/HSH User Manual

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Schlumpf, Inc., 15 Enterprise Drive, Windham, Maine 04062 U.S.A.
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Schlumpf, Inc.

General Guidelines On The Use Of Schlumpf Material Handling Equipment

General:

Thank you for choosing to use Schlumpf material handling equipment for your handling applications and needs. All Schlumpf machinery is proudly designed, manufactured, assembled, and tested in the U.S.A.

This information is intended for use and review by maintenance and operating personnel before the equipment is operated or maintenance is performed. Schlumpf material handling equipment is high-value machinery and should be used and maintained with care. Please read these instructions carefully!

Safety:

All equipment must be operated by trained personnel. Never touch any rotating machinery or machine parts until movement has completely stopped. Damage or injury may result!

Lifting Capacity / Permissible Use under Load:

Maximum load allowances have been calculated for this equipment based upon operating data supplied to Schlumpf at the time of order. Maximum load values refer to the maximum weight of the material to be handled. Never exceed the maximum allowable load value for this equipment. Consult Schlumpf before using this equipment in any other application for which it was not originally intended. Damage or injury may result!

Schlumpf material handling machines are intended to lift, lower, insert, extract, and position rolls or other forms of material. The machine is not intended to lift material over the specified design weights supplied to Schlumpf at the time of order. Damage to the machine or operator injury may result!

Plant / Workplace Conditions and Operation:

Machinery with which this Schlumpf equipment will be used should be in good repair and properly aligned (spindle to spindle axis, web path axis, etc.). Misalignment will cause adverse affects that may hamper desired operation and will increase the rate of wear of Schlumpf and other equipment.

Maintenance and Warranty:

To assure safe and proper operation of this and other equipment, follow preventative maintenance guidelines set forth in this manual* and any additional instructions prescribed by the manufacturer of the equipment on which your Schlumpf product will be used.

Periodically check screws and bolts for proper tightness as fasteners can loosen due to vibration. This product should be kept clean and free of foreign matter. Replace any and all damaged parts immediately.

**** Warranty claims can not be accepted unless proof of periodic maintenance (according to the guidelines set forth in this manual) can be furnished by the user.***

Lubrication:

For lubrication of moving or gliding surfaces we recommend the use of a high quality grease such as Jet-Lube Clear-Clean Lubricant with PTFE Synthetic Bearing Grease. If alternative products are used it is important that they meet the following requirements: high adhesion of the lubricant, high and permanent lubricate under load, little or no attraction of dust, contains no dangerous or hazardous propellants, gases, or ingredients that may be harmful to the environment or operators.

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Service:

Service and maintenance should be performed only by trained personnel following the guidelines established in this installation, operation, and maintenance manual. Damage or injury may result if established procedures are not followed! Please consult Schlumpf with any questions or problems you may have with this or any other Schlumpf equipment.

Spare Parts And Tools:

Use only Schlumpf spare and replacement parts or those recommended by Schlumpf. Use of any other parts will void your product warranty! Tools, metric fasteners, metric components, or any other special related items required for the maintenance of Schlumpf equipment are available from Schlumpf.

Transport Damage:

Schlumpf equipment is thoroughly tested and carefully packaged prior to shipment. If your unit was damaged in transport, contact the shipper immediately. Make sure that you contact the transporter within 24 hours of the receipt of the machine and, preferably, do not sign a receipt for the machine without noting the damage on the bill of lading. Call Schlumpf immediately! Do not try to operate the equipment. Damaged parts which have not been reported immediately to Schlumpf will not be replaced under warranty.

Equipment and Operating Safety:

This equipment was manufactured in accordance with the acknowledged regulations of the technology involved and has been thoroughly tested under load. Before placing the unit into service, check for possible transport damage and review this manual with all potential operators of the equipment. Thoroughly test the equipment unloaded before attempting to handle any kind of load.

Follow these guidelines for operating safety:

"WARNING"

- Never step under or stand under suspended loads.
- In principle, the operator stands behind or to the side of the unit, never to the front.
- Only the operator should remain within the working radius of the equipment.
- Always work within the permissible load capacity of the Schlumpf equipment and hoist system.
- Only allow trained maintenance personnel to service and repair the equipment.
- Use only Schlumpf accessories and spare parts.
- Always unload the equipment before lowering the unit to the floor or taking the unit out of service.
- Never exceed Schlumpf capacities for maximum roll or material weight and dimensions.
- Schlumpf equipment is designed to lift material only. Never lift personnel.
- Operators and personnel should never stand or ride on the machine.
- The maximum load capacity of all Schlumpf equipment is clearly labeled on the machine itself. Never exceed the load capacity of the unit. Damage, extreme wear and operator injury may result.

Closely follow the recommendations and instructions of the manufacturer of purchased system components. Failure to do so can result in equipment damage and/or serious operator injury!

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Statement Of Purpose

Schlumpf material handling equipment has been designed to operate as mechanical lifting, turning and positioning devices for the handling of rolled materials in a (core) horizontal and / or vertical orientation.

Schlumpf hoist-based equipment is for use with cranes and overhead hoists within the operating perimeter of the material handling plant or workspace and may be used only for this purpose. The hoist or crane on which Schlumpf hoist-based material handling equipment is used should have the capability of being rendered inoperable with an Emergency stop switch.

Schlumpf portable / floor-based equipment is for use within the operating perimeter of the material handling plant or workspace with a solid concrete or comparable floor and may be used only for this purpose.

Consult Schlumpf if the unit is to be used with materials other than rolled (cored) materials, or other than what the equipment was originally specified and designed.

Schlumpf standard mandrels are designed to handle materials with a paper/cardboard core. If the core of the material to be handled has been changed or is not paper/cardboard, special modifications to the grippers must be made. This includes, but is not limited to, steel, plastic and aluminum cores.

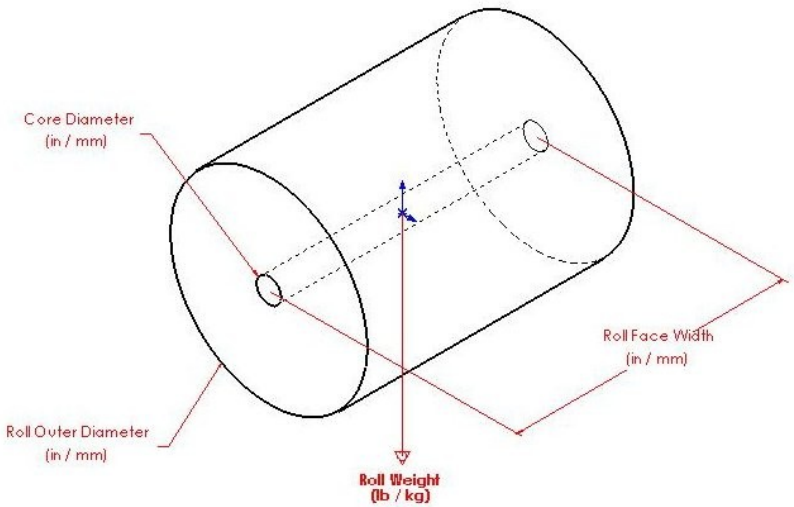
Schlumpf mechanically expanding mandrels are “fail safe”, self tightening, and can only be disengaged from the core by the operator.

CAUTION!

Schlumpf material handling equipment is for use under operating conditions supplied to Schlumpf at the time of order. As such, it may not be possible to safely use the machine for any conditions beyond the stated capacities and specifications. Please consult Schlumpf when a change in operating parameters may affect the unit’s safe and proper use.

Schlumpf equipment has been clearly labeled with warning and informational signs. For your safety, read and obey all labeling on your machine.

Load capacity, when handling and manipulating a rolled/cored bundle of material, is a function of roll weight vs. roll face width. A load capacity curve has been generated for most Schlumpf handling equipment and is located on the capacity page for the specific equipment pertaining to this manual. Do not exceed maximum capacity! Serious injury or equipment damage will result!



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Equipment Specifications And Capacities

The capacity for the MRH unit is clearly labeled on the unit itself.

MAX Roll Weight:	**see capacity label/spec sheet in back of manual**
Maximum Roll O.D.:	See spec sheet in back of manual
Min. Lifting Height:	See spec sheet in back of manual
Max. Lifting Height:	See spec sheet in back of manual
Lifting travel speed-MRH:	3in / revolution
Lifting travel speed-HRH:	0.5in / pump
Machine Weight:	350lb (159kg)
Shipping weight (approximate):	500lb (227kg)

The MRH is clearly labeled with a load capacity sticker. Do not exceed the maximum roll weight. Serious injury or equipment damage will result!

Example of capacity label on MRH unit*:

(*actual weight, width and diameter capacities will vary!)

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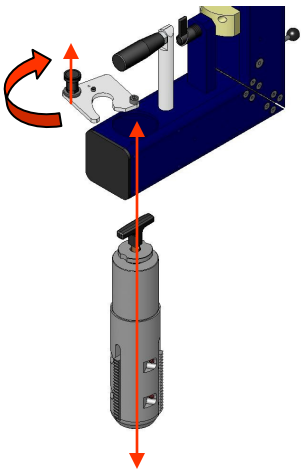
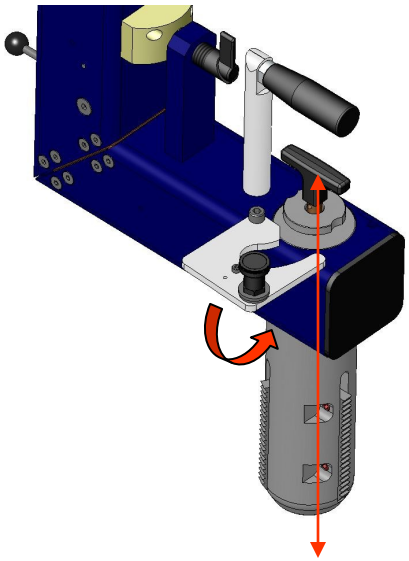
Set-up: PT tooling

The MRH-300 comes ready-to-use from the factory.

Mandrel installation

1. **Pull up on locking plunger and swing the plate to the open position.**

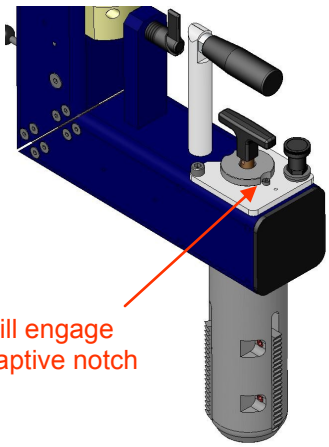




2. **Insert the mandrel.**

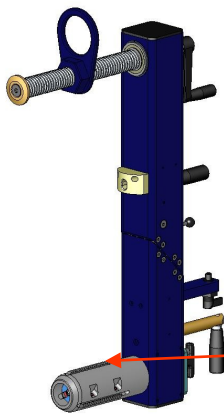
(Hoist-based MRT-330 shown)

3. **Lock the mandrel plate around the mandrel neck. The cap screw on the plate will engage with the mandrel notch.**



Cap screw will engage with mandrel captive notch

(Hoist-based MRT-330 shown)



NOTE!
Install mandrel in the MRH-300 so a gripper is top-center when the unit is in core-horizontal position!

Mandrel gripper on top in core-horizontal position

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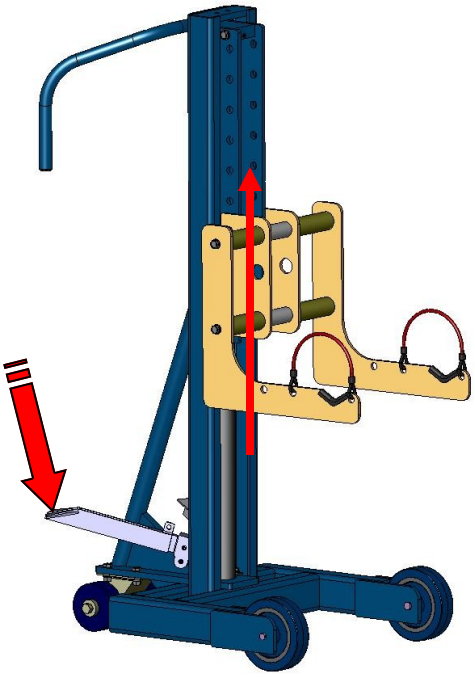
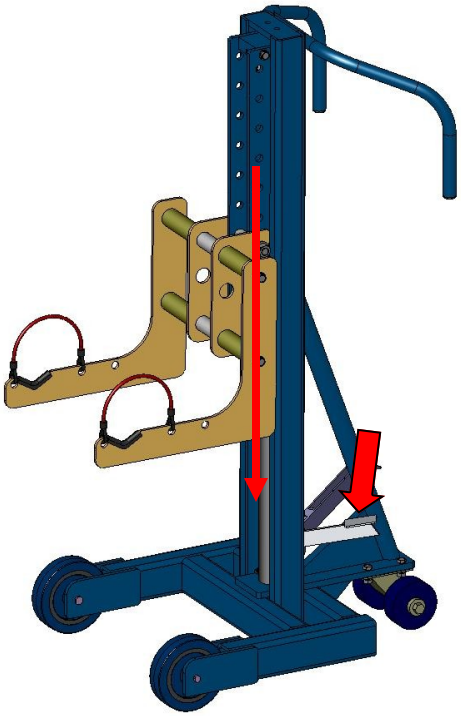
Operation: HSH lift/lower

LIFT

Actuate the manual foot pump repeatedly to lift a load with the HSH unit.





LOWER

Actuate and hold the release foot lever to lower a load with the HSH unit.

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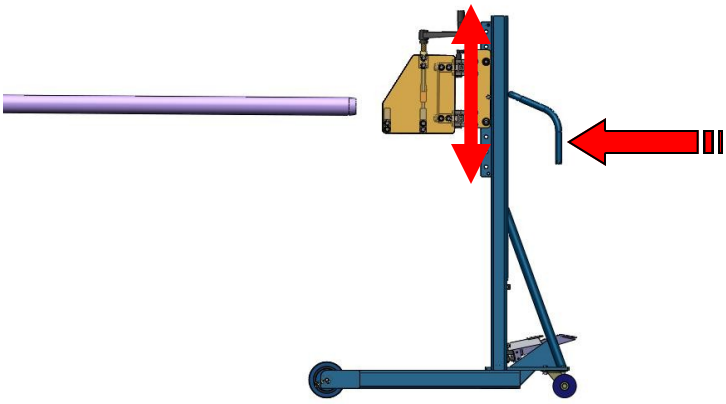
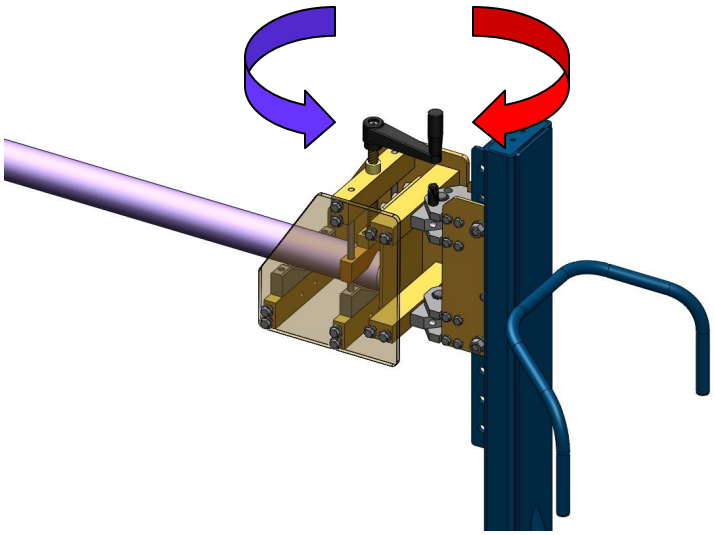
Operation: HSH tooling

Extracting a shaft:

1. Push the unit toward the shaft to be extracted.
2. Raise / lower the carriage and tooling so the shaft support anvils are just under the shaft journal end.
3. Push the unit forward until the shaft touches the stop plate and lines up with the anvils.





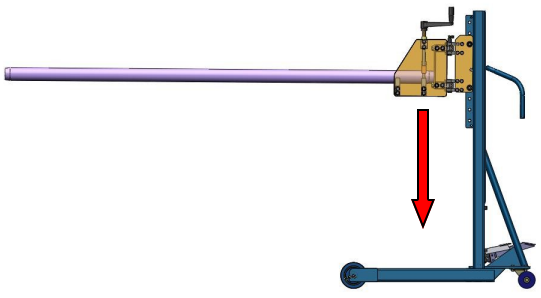
4. Turn the crank handle clockwise to tighten the clamp anvils. Tighten the anvils onto the shaft securely, but do not overtighten.
5. When the shaft is fully clamped in the tooling, extract the shaft from the core by pulling back on the unit.
6. When the shaft is fully extracted, it may be transported to the desired location.

To insert a roll, follow steps 1-6 in reverse order.

CAUTION!

TRANSPORT THE SHAFT AT A SAFE CENTERLINE HEIGHT.

IF THE SHAFT IS EXTRACTED FROM A CORE THAT IS HIGH OFF THE GROUND, LOWER THE TOOLING BEFORE TRANSPORTING THE SHAFT!



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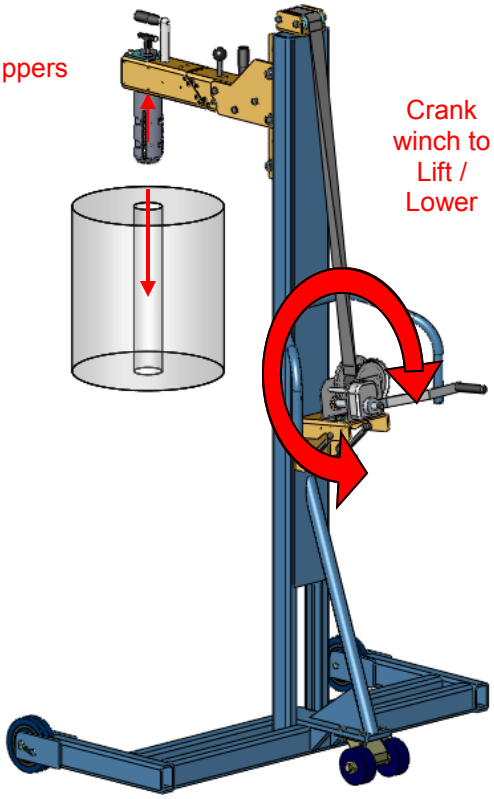
Operation: PT tooling

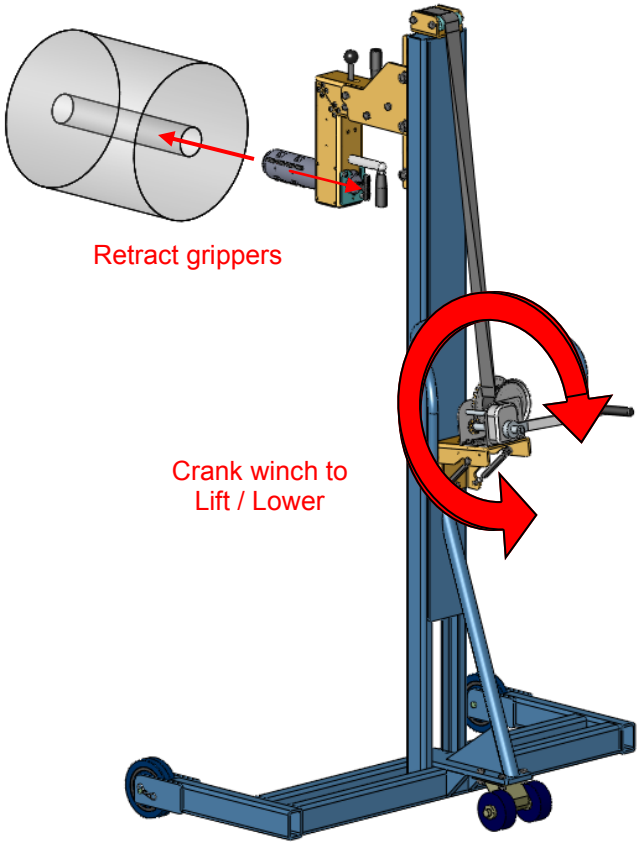
Loading a roll:



Move the MRH unit to the roll that is to be loaded.

Raise / Lower the carriage and tooling by cranking the lifting winch.

Position the unit so the mandrel is aligned with the core of the roll.



Retract the mandrel grippers.

Keep the grippers retracted and insert the mandrel into the core of the roll.
***If roll is horizontal, push the unit forward.**
***If roll is vertical, lower the tooling with the winch.**

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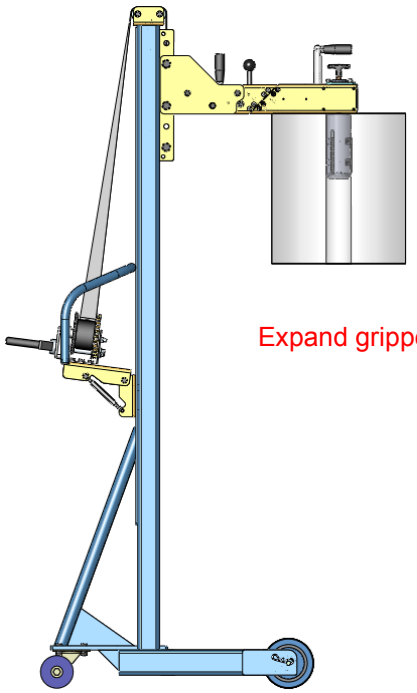
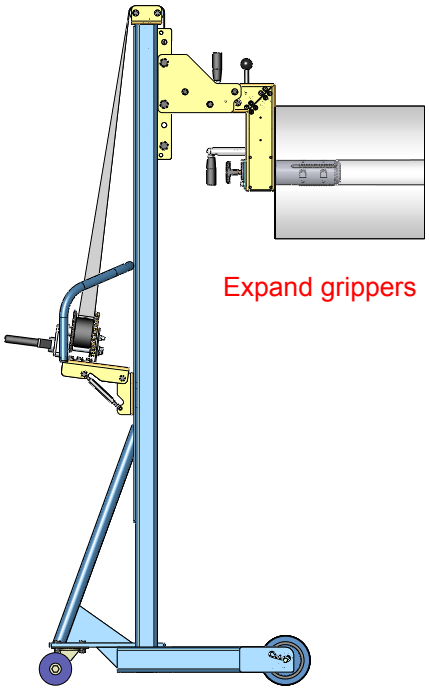
Operation: PT tooling

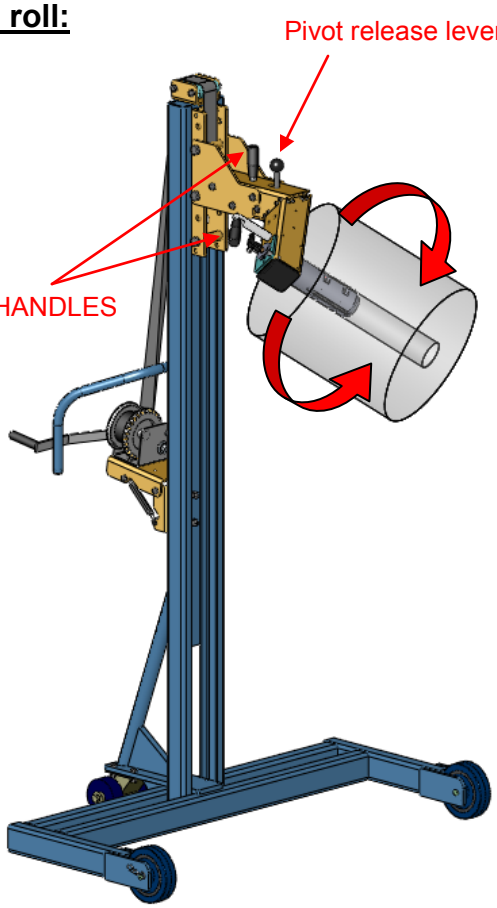
When the mandrel is fully inserted into the core, release the mandrel grippers.





Turning a roll:

HOLD ONTO BOTH CONTROL HANDLES AT ALL TIMES.



Unlock the pivot mechanism with the pivot release lever.

Rotate the roll to the desired position (from horizontal to vertical or from vertical to horizontal).

Release the pivot release lever to lock the pivot into position.

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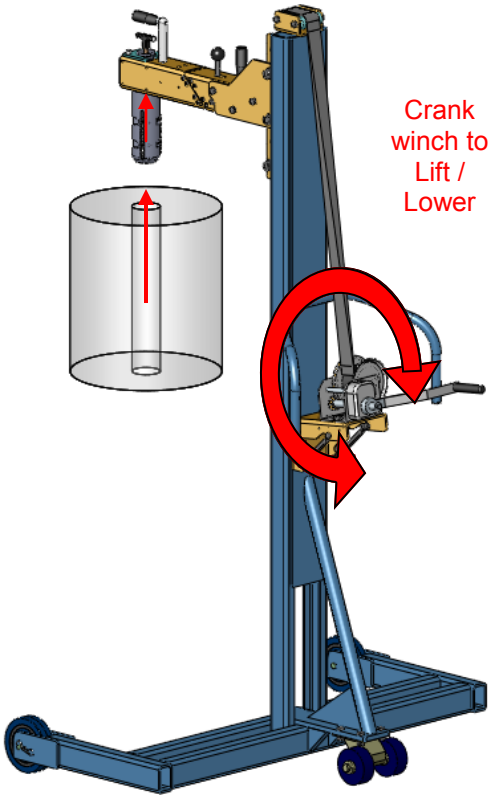
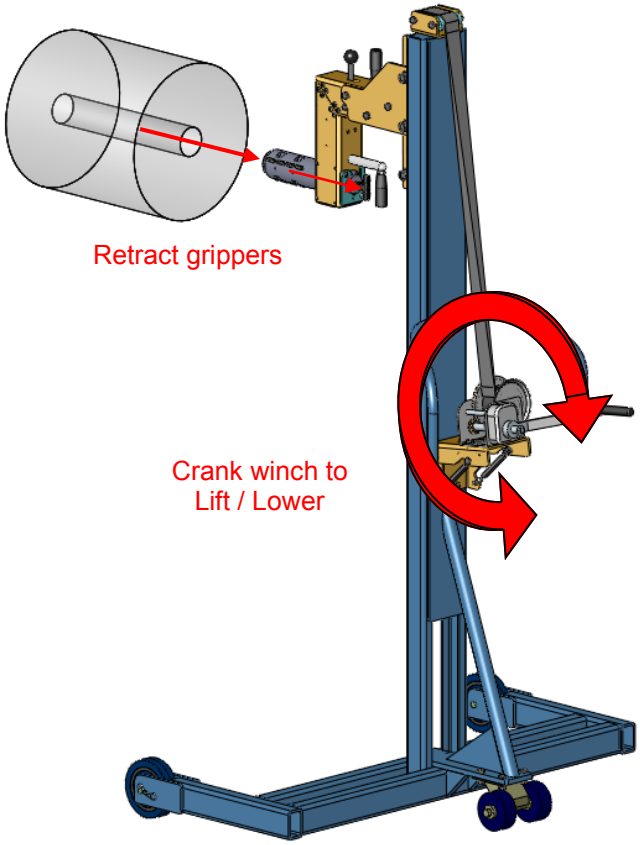
Operation: PT tooling

Unloading a roll:

Lift / lower the roll to a safely supported position with the manual winch.



Retract the mandrel grippers.



Keep the grippers retracted and extract the mandrel from the core of the roll.
***If the roll is horizontal, pull the unit away from the roll.**
***If the roll is vertical, lift the tooling with the winch to extract the mandrel from the roll.**

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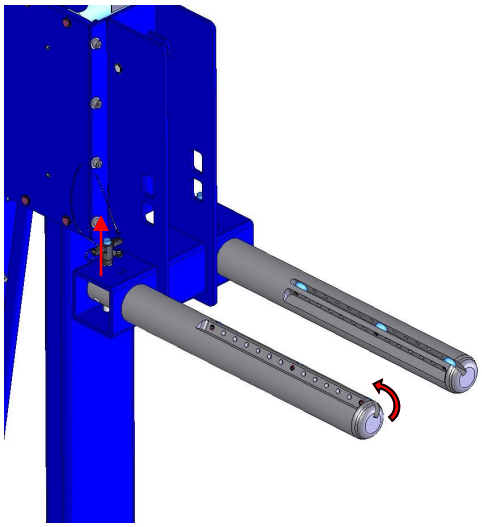
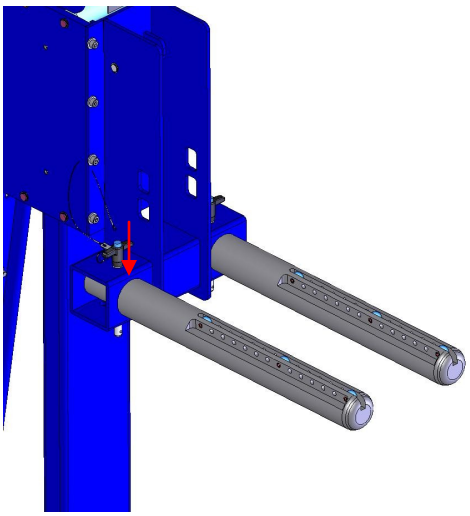
Operation: PC tooling

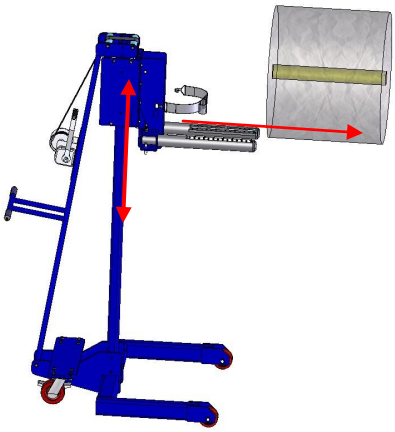


The orientation of the roller probes can be changed to best suit the roll diameter.

Pull the quick-release pins from the locking holes and rotate the roller probes to the desired position. Replace the pins to lock the probes into place.



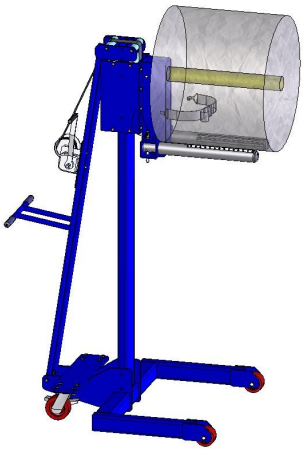
CAUTION!
The probes must be locked in the PC tooling with the locking pins for safe operation. DO NOT operate unit without the roller probes locked in. Damage and injury may result!



To load a roll, lift or lower the MRH carriage so the probes are slightly underneath the roll.

Push the unit forward so the probes are fully underneath the roll.

Lift the carriage up so the probes are supporting the weight of the roll.



For added safety, use the supplied nylon strap to secure the roll to the unit during transport.

To unload the roll, undo the safety strap. Push the roll off the roller probes onto a secure surface or spindle.

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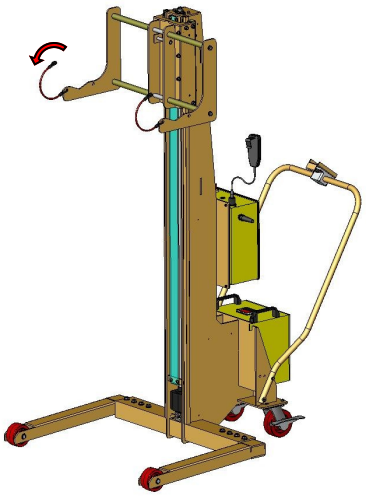
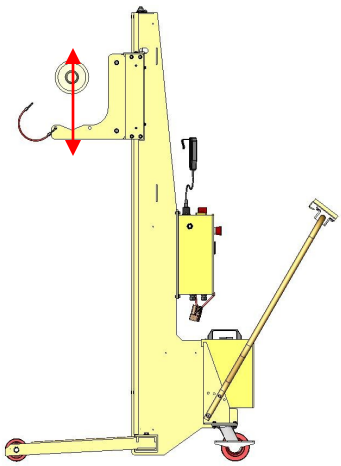
Operation: PSC tooling

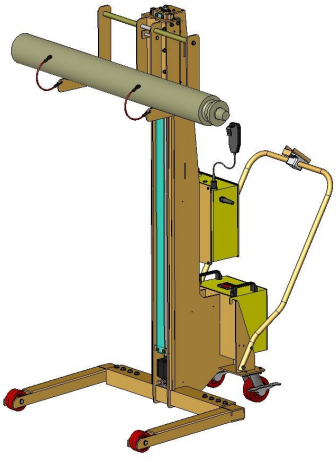
Unlock the shaft locking cords and swing them to an open position.



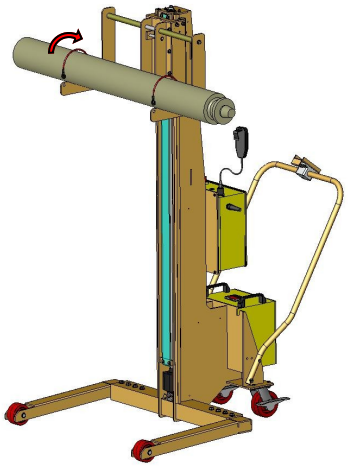


Lower the cradle tooling so it is under the shaft. Drive the unit up to the shaft so it is under it, as shown.

Raise the tooling to load the shaft in the cradle hook plates, as shown. Raise the tooling enough so the load of the shaft is on the tooling and the shaft journals are clear of the journal seats.



CAUTION! Shaft must be centered with the ERH unit for safe transport!



Swing the locking cords around the shaft and lock them in place to secure the shaft.

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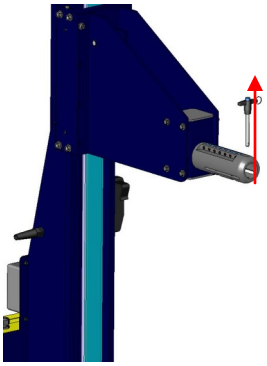
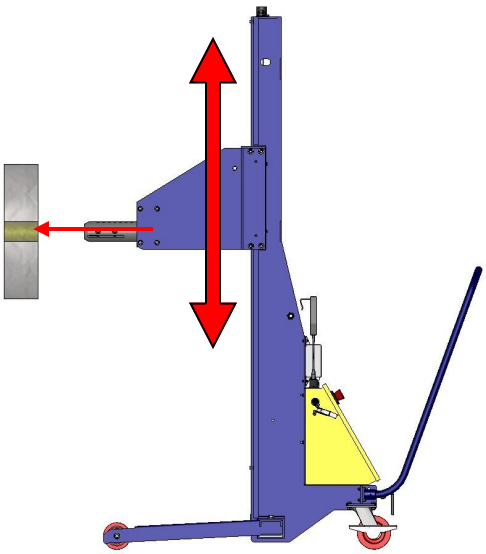
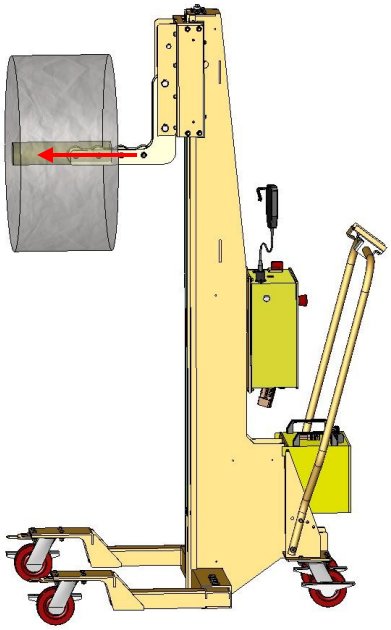
Operation: PH & PRP tooling

Remove the safety catch pin (if supplied with tooling) from the probe before loading a roll.



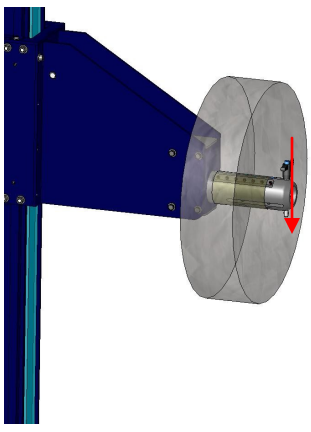


Lift / lower the carriage and tooling so the probe is aligned with the roll that is to be handled.



Push the unit forward to insert the probe into the roll, until the roll bumps against the probe support arm.

Lift the roll with the unit. If the roll width is less than the length of the probe, replace the safety catch pin (if supplied with tooling) for added transport safety.



Schlumpf, Inc., 15 Enterprise Drive, Windham, Maine 04062 U.S.A.
Tel: 207-893-1903. Toll Free: 877-460-4535. Fax: 207-893-1905.
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Schlumpf, Inc.

Troubleshooting

Please refer to the following list of potential problems and their solutions if the equipment is not functioning normally before calling Schlumpf. We'll ask you the same questions!

Note: Continual misuse of this product will cause extreme wear and increase the potential for operator injury. Units damaged in this manner should be removed from service immediately and returned to Schlumpf for repair.

1. The unit will not lift a load:

- Dilemma: there is an obstruction blocking the carriage rollers.
  - Solution: remove the obstruction from the unit. Thoroughly clean all electro-mechanical components and their surroundings.
- Dilemma: the carriage is at the end of its stroke.
  - Solution: do not try to lift the load any higher. Contact the sales department at Schlumpf, Inc. if the application requires an extended lift height.
- Dilemma: the load is exceeding the capacity of the unit.
  - Solution: Do not attempt to lift a load that exceeds the capacity of the MRH-300. Damage to the unit will occur. Contact the sales department at Schlumpf, Inc. if the application requires a greater lift capacity.

2. The unit will not properly release a roll:

- Dilemma: the load is not fully supported to relieve the weight from the mandrel.
  - Solution: lift / lower to load until it is fully supported and the mandrel is “floating” in the core. The grippers will not release when the mandrel is supporting any part of the load.

3. The mandrel will not engage with a roll core:

- Dilemma: the mandrel is the wrong size for the core.
  - Solution: change mandrels if multiple mandrels have been purchased. Contact the sales department at Schlumpf, Inc. if the application has changed or requires another mandrel size.
- Dilemma: the mandrel grippers are worn / damaged.
  - Solution: remove the mandrel from service and replace the worn / damaged grippers.
- Dilemma: the mandrel grippers are not worn / damaged but still do not engage with the core.
  - Solution: remove the mandrel from service and contact the sales & applications department at Schlumpf, Inc. to request a set of grippers with an alternative tooth profile. You may be required to send a sample core to Schlumpf, Inc. for appropriate testing so we can ensure the grippers will safely grip and hold a load.

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Periodic Maintenance

Generally, Schlumpf handling equipment is maintenance free. However, all mechanical equipment should be inspected periodically for safety, proper function, lubrication, and wear. This care will ensure years of trouble-free performance from Schlumpf equipment.

The check should be performed by trained maintenance personnel and a written record of the inspection should be maintained in accordance with regulations covering "load lifting devices". A tabulated page is located in this manual for keeping care and maintenance records. Schlumpf will, for a nominal fee, perform the inspection and submit a written report on all services. Contact Schlumpf for further information.

All Schlumpf MRH units should be Cared for According to this schedule*:

- **DAILY:**
  - **Inspect the loader for worn, damaged, or missing parts & fasteners.**
  - **Inspect the normal operation:**
    - The carriage and tooling Raise and lower through the entire range.
    - The turner tooling pivots to the vertical and horizontal positions.

- **MONTHLY:** **(remove unit from service)**
  - **Lubricate all moving parts and linear motion components. Refer to page 16 for proper lubricants**
    - Turner pivot mechanism
    - Carriage / mast bearings
    - Casters & wheels
    - All other metal-on-metal or moving parts
  - **Check all fasteners on the unit and tighten to the proper torque if loose.**

- **YEARLY:** **(remove unit from service)**
  - **Disassemble mandrel and inspect gripper pins and gripper segments for wear and damage. Replace any pins and grippers that show excessive wear.**
  - **Disassemble pivot mechanism. Inspect pivot pin and release lever, and thrust bearings. Replace any components that show excessive wear. Apply lubricant and reassemble. Use threadlocker on all fasteners for the pivot mechanism!**

*** Schedule is based on one shift per day.** The time intervals between service may need to be reduced, depending on the amount of use and the environmental conditions present in your application (i.e., a machine used in a dusty environment may need to be cleaned and lubricated more often).

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Fastener torque

Fasteners should always be installed to their proper tightening torque. The table below shows the recommended tightening torques for standard metric screws.

Size	Torque (N-m)	Torque (lb-in)
M4 x 0.7	5.8	52
M5 x 0.8	12	106
M6 x 1.0	20	179
M8 x 1.25	49	430
M10 x 1.5	97.5	863
M12 x 1.75	165	1460
M16 x 2.0	412	3650

Lubricants & Thread locking fluids

Schlumpf recommends the following compounds & fluids or their equivalent be used to provide care and maintenance for MRH roll handling units:

- **Lifting screw & linear bearing lubricant**
  - Jet-Lube Clear-Clean Lubricant with PTFE
- **Metal-on-metal lubricant**
  - Motorex Universal 2000 spray lubricant
- **Fastener thread locking**
  - Loctite 242 (Blue) medium-duty threadlocker

CAUTION!

Damaged or worn parts should be replaced immediately! Many Schlumpf parts have specific surface treatment and especially heat treatment. Use only Schlumpf spare and replacement parts. Failure to do so may result in damage to the equipment or process! Never alter tooling or lift carriage parts without first consulting Schlumpf. Damage or injury may result. Always unplug the power cables before servicing Schlumpf machines.

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Recommended spare parts

Spare parts lists, assembly specifications, and in the case of units with integral controls, wiring diagrams, are attached to the back of this manual for the MRH Roll Handling Unit. Copies of the spare parts list are available upon request.

Recommended spare parts to be kept on hand, per unit, are indicated on the spare parts list drawings in the back of the manual. They have an asterisk at the end of the part number.

Example:

P-10186* Crank handle

Service Information

To arrange for service on any Schlumpf roll handling devices, contact Schlumpf at the following address:

Schlumpf, Inc.
15 Enterprise Drive
Windham, Maine 04062-5650 U.S.A.
Tel: 207-893-1903
Fax: 207-893-1905
E-mail: mail@schlumpf-inc.com
Internet: www.schlumpf-inc.com

Be prepared to supply the following information:

1. MRH/HRH Serial No. (M-XXXXX).
2. Description of service required or nature of problem.
3. Original Purchase Order No.
4. Schlumpf Invoice or Sales Order No.
5. Date of purchase.
6. Your name, address, telephone No. , fax No. or other contact information.
7. Purchase Order for service.

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Notes & Maintenance Records:

Desription of Care / Maintenance Performed:		Date Performed:	Maintenance Performed by:

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Schlumpf, Inc.

Manufacturer's Declaration:

Manufacturer and Distributor:

Schlumpf, Inc.
15 Enterprise Drive
Windham, Maine 04062-5649 U.S.A.

Tel: 207-893-1903
Fax: 207-893-1905
E-mail: mail@schlumpf-inc.com
Internet: www.schlumpf-inc.com

Declares that this Schlumpf Type MRH manual-powered roll handling unit been designed and manufactured according to known engineering and safety specification and regulations.

This unit was made in the U.S.A. with materials and components known to be of high quality. The use of the equipment is governed by local, sate and federal safety regulations.

Warranty Statement:

Seller warrants that the products sold will be free of defects in material and workmanship for a period of one year (365 days) when used on a one shift per day (not more than eight hours) basis, six months (180 days) when used on a two or three shift per day (more than eight hours) basis, from the date of delivery unless otherwise specified on the face of this document. This warranty is limited by the paragraphs below.

If buyer discovers a defect in any of the products covered by this Agreement, Buyer's exclusive remedy shall be to notify Seller immediately of such defect, and Seller,, at its option, will repair or replace the Products, or refund the purchase price. Said notice shall be in writing and shall contain pertinent information to permit Seller to identify the Product which is claimed to be defective, including without limitation, the product type and serial number and a full description of the circumstances giving rise to the claim. Failure to properly notify Seller within warranty period of such defects or Buyers undertaking or authorizing others to undertake remedial action without Seller's express approval in writing shall immediately invalidate Seller's warranty obligations.

Upon timely receipt of proper notice, Seller shall inform Buyer of the remedial action which it intends to take, and if return of the product is elected by Seller, Seller will provide Buyer with a Return Authorization Number. Buyer must comply with Seller's shipment instructions (see paragraph below) and ship the defective Product immediately.

Seller reserves the right to reject any warranty claim not properly reported and any warranty claim on any item that has been the subject of abuse, misuse, neglect, improper installation or repair, alteration, modification, accident, improper return handling, use in or with equipment not suitable for such use, unusual physical, electrical, electro-magnetic stress, failure of electric power, external causes affecting the Product, or other factors which are not covers by the warranty.

Buyer must pay freight costs to Seller for returned Products. Buyer's packaging list must show the Return Authorization Number, invoice number, date and list of all returned goods. The carton must also show the Return Authorization Number. Seller will pay return freight to the Buyer and reimburse Buyer for its reasonable return freight costs for products which are subject to warranty adjustment. There is no other charge for warranty adjustment during the warranty period, When Buyer returns any Product, Buyer shall be responsible for all damage resulting from improper packing or handling and for loss in transit notwithstanding any defect or nonconformity in the Product. If it is found that a warranty adjustment is not available for any defect claimed by Buyer, for any reason, Buyer will be notified and the product will be returned at Buyer's expense.

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Buyer hereby acknowledges that it has not entered into the agreement in reliance upon any warranty or representation by any specific person or entity except for the warranties or representations set forth herein.

Disclaimer

Seller shall not be liable for any loss, damage or penalty resulting from delay in delivery or performance when such delay is due to causes beyond the reasonable control of Seller, including, but not limited to, supplier delay, acts of God, civil or military authority, labor unrest, fire, riots, war, embargoes, unusually severe weather, shortage of power, explosion, or earthquake.

THIS WARRANTY IS THE ONLY WARRANTY BY SELLER WITH RESPECT TO THE PRODUCTS DELIVERED HEREUNDER AND MAY BE MODIFIED OR AMENDED ONLY BY A WRITTEN INSTRUMENT SIGNED BY A DULY AUTHORIZED OFFICER OF SELLER. EXCEPT AS HEREINABOVE PROVIDED, SELLER MAKES NO WARRANTIES, WHETHER EXPRESSED OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE WARRANTIES SET FORTH IN SECTION ABOVE EXTEND ONLY TO BUYER.

Sellers Limited Liability

SELLER'S LIABILITY FOR BREACH OF THIS AGREEMENT, INCLUDING, WITHOUT LIMITATION, DELAY IN DELIVERY OR PERFORMANCE, SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE GOODS OR REFUND OF THE PURCHASE PRICE. IN NO EVENT SHALL SELLER BE LIABLE FOR COST OF PROCUREMENT OF SUBSTITUTE GOODS BY THE BUYER OR ANY SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, HOWEVER CAUSED, WHETHER FOR BREACH OF WARRANTY, NEGLIGENCE OR OTHERWISE.

Product Returns

Returns of products are accepted at the sole discretion of Schlumpf, Inc. Products returned must be accompanied by a complete written description of the reason for the return and will not be accepted without prior notification and issuance of a Return Authorization Number (RA No.) by Schlumpf, Inc. Buyer is responsible for the cost of the return freight and the return may be subject to restocking fees. Extreme care should be made for the packaging of goods returned for credit. Buyer will be held responsible for reasonable damages to the return resulting from insufficient packaging and handling during transit.

A complete statement of terms and conditions of sale are available from Schlumpf upon request.

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